

# INTERNATIONAL BULLETIN OF PLANT PROTECTION

## DISCOVERIES AND CURRENT EVENTS \*

### **Algeria: Flying Swarms of Desert Locust, *Schistocerca gregaria* (I).**

On 3 May 1929 the post of Oued Djellal reported very small swarms in the North West and Southern regions.

On 16 May the post of Touggourt reported swarms of moderate importance at El Meguibra, Arab Gheraba, Sidi Sliman flying eastwards; the areas infested by eggs were marked down.

The post of Timimoun reports a considerable group of locusts on 14 May at Zaouit Delagh, Hassi Retem.

Egg laying was reported on 20 May in the Negrine region (M. C. of Tébessa).

Hatchings were reported by the post of Oued Djellal on 29 May in the region to the S. W. of the post of Bir Sadouneb Djouf. A considerable swarm of grey locusts coming from the South and travelling northwards was reported on 31 May at Deldoul Barka bel Ghazi (Timimoun).

### **Algeria: Moroccan Locust, *Doclostaurus maroccanus*, in the three Departments (I).**

DEPARTMENT OF ORAN. — The campaign against Moroccan locusts may be considered as ended (May, 1929) in the mixed Communes of Saïda, le Télagh and in the Commune of Berthelot P. E. The results are very satisfactory and it is unlikely that any considerable swarms will start in these Communes. Intensive spreading of poison baits has restored the situation in these regions which have at times been seriously menaced.

DEPARTMENT OF ALGIERS. — In this Department, where conditions are much more severe than in Oran, control measures are ending in almost all Communes.

The campaign still continued actively in the Communes of Chellala, Ain Bessem, Ain Boucif and Sidi Aïssa where several columns, more or less dense, of Moroccan locusts are being controlled by means of poison baits.

Hatching still continues in the Communes of Boghni P. E., Dra el Mizan and Fort National Mixte; ceryl spraying gives excellent results which encourage the hope that the locusts will shortly be almost completely destroyed.

Some fairly considerable swarms have already been reported as alighting on the territories of Aumale Mixte and Sidi Aïssa. Strict instructions have been given that the areas infested by eggs should be very accurately located.

\* In this, as in the next two chapters, the countries are arranged in French alphabetical order.

(1) Communication from the Governor General of Algeria to the International Institute of Agriculture.

DEPARTMENT OF CONSTANTINE. — Control measures have ended in the Mixed Communes of Biban, Rihra, Eulma, Aïn el Ksar, Châteaudun-du-Rhumel and Bélezma where the work has been almost completely successful, owing mainly to the use of large quantities of poison baits.

Work is still proceeding in the Communes of M'sila, Maâdid, Tocqueville P. E., Ampère P. E., Lambèze P. E., Aurès Mixte. The situation is still rather serious at Barika, Batna and Aïn Touta.

Considerable swarms have alighted on the territory of M' Sila, Maâdid, Tocqueville, Aïn Touta, Bélezma and Barika.

The locusts are actively controlled, as soon as they settle, by poisonous mixtures.

### Eritrea: Locusts (1).

The swarms of locusts which in March and April 1929 had invaded the territory of the Colony from its southern boundary laid their eggs early in May in the Hazamò plain, in the upper basin of the Mareb-Gasc, in the upper Barca, and in the high valley of the Cheren 'Commissariato' territory descending towards the Red Sea.

It is estimated that altogether the area of deposition aggregates about 1500 hectares. The density of deposition varies from a maximum of 200 to a minimum of 50 egg pods per sq. m.

About 300 hectares, with ground easily worked and near inhabited centres, have been ploughed up, thus completely preventing the hatching of the eggs.

In other localities, which were all carefully watched, hatching started about 15 May.

Energetic control measures were carried out everywhere, flame projectors and the usual mechanical means being employed. Arsenite of soda ordered in Italy did not arrive in time owing to a mistake in the date of consignment.

The flame projectors are very effective; with a couple of flame projectors (working early in the morning and late in the evening only) about 200 c. m. of larvae were destroyed in a single day. It is hoped that in this way the locally bred locusts will be destroyed before they can cause serious damage to the crops.

Apparently many locusts have hatched in Abyssinian territory, and no control measures have been carried out against them.

The first swarms of these locusts invaded the territory of the Colony towards the Tacalà.

The locusts, after laying their eggs in the regions named, all passed eastwards, and mostly towards the Dancalia.

### Dutch East Indies: Diseases and Pests of Coffee, Cacao, Kapok, Nutmeg, and Greenmanuring Plants (2).

Coffee. — Root diseases were not important in 1928.

*Fomes lamaricensis* was to be found in all districts. In the Malang district the black root disease (*Xylaria Thwaitesii*) appeared here and there. The white root fungus (*Fomes lignosus* = *Rigidoporus microporus*) was found in Besoeki, but only sporadically.

The newly found die-back disease, the cause of which is still unknown, was found

(1) Communication from the official correspondent to the Institute, Dr. A. DE BENEDICTIS, Head of R. Ufficio Agrario of Eritrea at Asmara.

(2) Communication from the official correspondent to the Institute, Dr. C. J. J. VAN HALL, Baarn.



in all the parts of South Sumatra. In East Java it was found for the first time in this year, viz. on some estates on the Kloet and Smeroe mountains. In Central Java it was found on one estate.

Nematodes (*Tylenchus acutocaudatus* and *Tylenchus coffeae*) were present in Java in all the coffee growing districts, but the damage is only locally important. Larvae of *Opatrum depressum* caused root damage on a few estates.

Twig borers caused much damage on some estates (in Sumatra and West Java *Xyleborus morstatti*, in the far East of Java *X. morigerus* and in the rest of Java both species together). In South Celebes *X. morstatti* was troublesome. Parasites of this species seemed to be absent, they were imported from Java by the Coffee Experiment Station. On a few estates on the Smeroe Mountain at a high altitude two other *Xyleborus* species, viz. *X. bicornis* and *X. discolor* were found.

The berry borer (*Stephanoderes hampei*) did more damage than in 1927, except in South Sumatra.

The green and the brown scale (*Lecanium viride* and *L. hemisphaericum*) were present everywhere, but they only develop to a serious pest when the 'gramang' ant (*Plagiolepis longipes*) is present in large numbers. Destroying this ant is the only way to fight the scales.

C a c a o. — A few cases of brown root disease (*Fomes lamaoensis*) were reported in 1928, and one case of *Rhizoctonia bataticola*.

*Helopeltis* was a serious pest.

The cacao moth (*Acrocercops cramerella*) was of comparatively little importance.

As every year, borers were of importance on some plantations, and some young fields were damaged by Melolonthid beetles, especially by *Adoretus* and *Apo-gonia*.

K a p o k. — *Rigidoporus microporus* (= *Fomes lignosus*, 'white root fungus') and *Fomes lamaoensis* ('brown root fungus') did much damage in a young kapok plantation in 1928.

*Helopeltis* damaged the young shoots of newly planted stumps.

Young plants suffered from the Coccids *Pseudococcus crotonis* and *Ps. citri*.

*Nisotra javana* was troublesome in nurseries, where it fed on the leaves and caused almost complete defoliation of the young plants.

The borers *Zeuzera coffeae* and *Mudaria variabilis* were found here and there.

N u t m e g. — The 'pod fungus' was present in all the fields and caused the loss of many pods.

Canker (*Phytophthora Faberi*) caused some damage.

The beetle *Oryzaephylus surinamensis* attacked the stored nutmegs.

Greenmanuring Plants. — *Indigofera endecaphylla* was attacked in 1928 by the caterpillars of *Dichomeris ianthes* and *Phytometra* sp.; on the roots *Heterodera radicolica* and *Tylenchus acutocaudatus* were found and the fungus *Rosellinia* sp.

*Erythrina lithosperma* was attacked by the topborer *Terastia egialealis*, and by the caterpillars of *Agathodes modicalis*.

*Leucaena glauca* was attacked by the fungi *Septobasidium bogoriense* and *Corticium salmonicolor* ('pink disease'), by the root fungi *Fomes lamaoensis* and *Rosellinia* and by the stem borer *Xyleborus morigerus*. The foot of the stem was sometime attacked by *Septobas. rubiginosum*.

*Deguelia microphylla* was attacked by the root fungi *Ganoderma lucidum* and *Gan. pseudoferreum*.

*Albizzia falcata* suffered from the root fungi *Diplodia*, *Rosellinia*, *Ganoderma pseudoferreum* and *Rhizoctonia bataticola*, from the caterpillars of *Terias hecabe* and a beetle of the family *Chrysomelidae*.

*Tephrosia* spp. were attacked by the white fly *Pseudococcus virgatus*, the root fungi *Rosellinia bunodes*, *Diplodia* and *Rhizoct. bataticola*.

*Cassia multijuga* suffered from *Gan. pseudoferreum*.

*Desmodium gyroides* suffered from *Oidium* sp.

*Crotalaria* spp. were attacked by the bug *Ragnus importunitas*. The fruits were attacked by the caterpillars of *Catochrysops cnejus*, the stems by *Xyleborus morigerus*. Old plants were often attacked by the fungus *Septobas. bogoriense*.

*Adenanthera microsperma* suffered from a leaf fungus (*Meliola*).

*Centrosema pubescens* was attacked by *Septobas. rubiginosum*.

On *Vigna Hoesi*, *Rhizoctonia Solani* often occurs as a serious parasite. The same fungus sometimes attacks *Pueraria javanica*.

#### 'Iraq: Note on *Oligonychus simplex* (1).

As previously reported the mite *Oligonychus simplex* is the Acarina causing the "Ghubbar" disease of dates. As the Arabic name of the disease signifies, attacked dates are covered with a dust, which is in fact ordinary wind borne dust attached to the fruit by the webby filaments spun by the pest.

As the winter in the date-belt of Basrah (where the pest does annually many thousands of pounds worth of damage) is often very severe, it has always been considered that the mite hibernated in the masses of fibre which surround the palm at the leaf-basis.

This theory has, however, never been definitely proved. During the winter of 1928-29, Mr. A. DUTT, the Entomologist in charge of the Seed Testing Station at Basrah investigated the matter further. It is a matter of some surprise to find that the mites, in point of fact, pass the winter on the leaves as either adults or eggs.

Both wintering adults and eggs are modifications of the usual forms. The adult mite adopts a flatter form and the integument thicken considerably, assuming a bright orange colour. The winter eggs are also bright orange in colour (as opposed to the normal creamy colour). They are elongated with rounded ends instead of being spherical as is normal.

The wintering adult is attached firmly to the leaf by its mouth which is firmly imbedded in the leaf tissue, the egg is attached by a secretion presumably emitted at the time of egg-laying.

Examination showed that young off-shoots for planting were liable to carry the disease in this form even in the winter season, a matter of some importance as it is in the winter season that replenishment and extension of existing gardens is undertaken.

Up to the end of March, 1929 the wintering forms had shown no signs of activity. It is true that the winter of 1928-1929 was exceptionally mild, but it is considered nevertheless, that this life-history is probably normal.

Investigations continue particularly with a view to the possibility of control measures being undertaken during the winter, when the palms are free from either fruit or flower. A further report will be made in due course.

(1) Communication from the official correspondent to the Institute, Mr. J. F. WEBSTER, B. A., Inspector General of Agriculture, Baghdad, Iraq.



## Turkey: Crop Pests (I).

*Eurygaster integriceps* :— This Hemipter in the larval and adult stages has attacked wheat and to a slight extent barley ; the Provinces of Silifqué, Adana and Ayintap, situated along the Turco-Syrian frontier have been infested ; a Chalcid egg-parasite of this insect has however been found.

*Aphididae* :— various species of plant-lice have been found on different crop plants.

*Diaspis pentagona* :— on mulberry and other trees, near Stamboul.

*Tanymecus palliatus* F. :— this beetle, which has been found near Smyrna, does damage to the vine.

*Rhynchites bacchus* L. :— attacks potatoes in the Stamboul and Brusa regions.

*Scolytus pruni* Ratzb. :— this insect is very injurious to apple and cherry trees, near Angora.

*Hyponomeuta malinellus* Zell. :— widely distributed and very injurious to apple and plum trees.

*Aporia crataegi* L. :— injurious to apple and pear trees near Angora ; *Apan-  
teles* sp. is very useful in checking the development of *A. crataegi* ; artificial control measures consist in arsenical spraying.

*Locustastaurus maroccanus* Thunb. :— a large proportion of Moroccan locusts have been destroyed by means of a special organization for protection and the use of zinc barriers and arsenical bait : invasions of Moroccan locusts took place all along the Turco-Syrian and Irak frontiers and in a certain region of the Province of Smyrna.

*Calliptamus italicus* L. :— the hatching of the egg pods took place at the beginning of May : the Italian locusts are injurious to spring crops and to market gardens in Thrace, Samson and Brusa.

*Schistocerca peregrina* Ol. = *Schist. gregaria* Forsk. :— there have been no invasions this year.

## VARIOUS QUESTIONS

### DATA AND INFORMATION ON DAMAGE CAUSED TO CULTIVATED CROPS BY THE COLD OF THE WINTER 1928-1929.

**Algeria (2).** — The winter 1928-1929 has not been characterised in Algeria by exceptional temperatures. At Algiers the thermometer remained constantly above 0°C., and throughout the rest of the country the temperatures registered were normal. During the winter there were however long rainy periods which were relatively cold, but there was no especially injurious result on plant life.

**Spain (Almería) (3).** — The minimum temperatures observed in this region from October 1928 to June 1929, according to information communicated by the official Meteorological Service, were as follows :

(1) Communication from the official correspondent to the Institute, Mr. M. SUREYA, Councillor of State, Angora.

(2) Communication from the official correspondent to the Institute, Dr. René MAIRE, Professor of the Faculty of Science of the University of Algiers.

(3) Communication from the official correspondent to the Institute, Mr. Jesús BERRO Y AGUILERA, Director of the Estación de Patología Vegetal, Almería.

28 October	1928	12° 6C.
30 November	»	8° 8 »
13 December	»	7° 2 »
3 January	1929	4° 4 »
8 February	»	6° 3 »
29 March	»	8° 6 »
4 April	»	9° 0 »
1 May	»	10° 2 »
12 June	»	14° 0 »

It will be seen from these data that none of the crops have suffered from low temperatures during the past winter, as this zone may be regarded as sub-tropical; during the colder months sugar cane and also oranges and choice vegetables are grown in this region.

**Italy (1).** — The beginning of last winter was normal as regards temperature, but after the first ten days of January 1929 the cold became intense and below the normal, causing snowfalls, frosts and rimes, especially in Northern and Central Italy, without however producing appreciable damage. Some mischief was recorded in the second decade of the month the snowfalls, frosts and rimes being intensified and becoming almost general and persistent in the third decade, causing considerable losses among vegetables, potatoes and seedlings. More severe damage however was recorded in the first and second decades of February during which the temperature again fell considerably in almost the whole of continental Italy. In the third decade a slight improvement in meteorological conditions took place, the soil of a good part of the fields in the Northern and Central regions however remaining frozen.

By the end of February the period of exceptional cold may be considered to have finished.

The lowest temperatures recorded in the various regions of Northern, Central and in part of Southern Italy during January and February of this year were as follows:—

Piedmont, from  $-14^{\circ}$  to  $-20^{\circ}$ ; Lombardy, from  $-17^{\circ}$  to  $-22^{\circ}$ ; Veneto, from  $-18^{\circ}$  to  $-25^{\circ}$ ; Trentino and Alto Adige, from  $-17^{\circ}$  to  $-25^{\circ}$ ; Venezia Giulia, from  $-16^{\circ}$  to  $-25^{\circ}$ ; Emilia, from  $-18^{\circ}$  to  $-25^{\circ}$ ; Liguria, from  $-6^{\circ}$  to  $-12^{\circ}$ ; Tuscany, from  $-10^{\circ}$  to  $-18^{\circ}$ ; Umbria, from  $-10^{\circ}$  to  $-16^{\circ}$ ; the Marches, from  $-8^{\circ}$  to  $-14^{\circ}$ ; the Abruzzi, from  $-12^{\circ}$  to  $-24^{\circ}$ ; Campania, from  $-3^{\circ}$  to  $-9^{\circ}$ ; Molise, from  $-6^{\circ}$  to  $-10^{\circ}$ ; Basilicata, from  $-8^{\circ}$  to  $-12^{\circ}$ .

These minima concern regions in which extensive agricultural crops are found, exceptional temperatures recorded in high mountain areas not being included.

Among herbaceous plants, garden plants were badly damaged (rosemary remained to a great extent frozen); the wheat seedlings, owing to frost, suffered more or less from thinning, especially in low-lying places; among woody fruit plants, vines and olives suffered the most severe damage; peaches, pomegranates and figs were also considerably damaged. Among woody ornamental plants oleanders, cypresses, eucalyptus, planes, willows, mulberries, alders, horsechestnuts and poplars (especially the Canada poplar) were seriously affected. American vines, and to a less degree the hybrids with *Vinifera* strain, proved very resistant;

(1) Communication from the Royal Station of Plant Pathology at Rome, official correspondent of the Institute.



among the European varieties those with red grapes and hard skins were relatively more resistant: the "Barbera" and the "Lambrusco" were among those that suffered most, the "Freisa" not so severely.

Among the different varieties of olive tree the more delicate such as "Frantoiana", "Moraiola", "Razza", "Rosciola" proved more sensitive to cold.

In Liguria all kinds of citrus trees suffered severe losses.

Potato tubers froze in very large quantities in Piedmont, Lombardy, Veneto, Venezia Giulia, Trentino, Alto Adige, Emilia, Abruzzi. Hempseed also suffered severely with loss of germinating power.

As regards the vine, it may be estimated that in the Valley of the Po, where the losses were most considerable, about 50 % of the plants were more or less injured. The percentage of vines killed or rendered unserviceable by the cold varied very much from one region to another. In certain Modenese areas even 10 % of the vines may be considered as lost. In most cases only the wood of two or three years old was damaged. For the olive it may be estimated that even in Central Italy 30 % of the trees were more or less seriously damaged in the branches and trunk, damages which are aggravated by the development of "bacterial tumours" ('rognà' or 'tubercolosi', *Bacterium Savastanoi* Smith).

In some areas 2 % of the trees were completely killed while many others show partial necrosis of the branches and trunk.

In all woody plants affected by the cold, the younger branches and also the leaves of evergreens suffered most injury. The thicker branches and the trunk suffered necrosis in more or less extensive zones of the cambium, of the bark and of the sapwood with longitudinal splittings.

As regards the vines it has been ascertained that weakening through 'phylloxera', over-lengthy pruning, large amount of moisture and abundance of organic matter in the soil have caused, in some regions, extensive damage even to varieties considered resistant to cold. In Emilia farms in which the vines were pruned in the early part of the winter were all frozen while those left unpruned during the winter were much less damaged or scarcely at all in the two year old branches.

In the plains the damage was more serious than in the hills. The different situation of the vineyards was not however any general determining factor in the different behaviour of the plants to the action of cold. In Piedmont, for instance, it was observed that in some localities, while in the valleys the frost was uninterrupted day and night, on the hills which were in sunshine during the day the snow accumulated on the branches of the vines melted and then, in the evening, the water from the melted snow again froze with serious effects. Where the vines were grown on trellises close to walls or mixed with trees a cold of  $-20^{\circ}$  did not cause damage. Differences in degree of sensitiveness to cold were noted according to the age of the plants. In young vines on land covered with snow the frozen tissues extended to the whole or almost the whole of the aerial parts down to about 30 cm. from the ground. In old vines the frozen tissues were found even lower; but not invariably, for in some localities the old vines suffered less than the younger vines.

Eighty per cent of the buds were killed.

Generally, the lower limit of the part of the plants killed or damaged by freezing was determined by the depth of the snow and a few centimeters below the snow surface the tissues did not suffer. Where however there was no snow the young vines had even their surface roots frozen.

Compact soil with poor drainage contributed to render the vines, like all other plants, more sensitive to the effect of the cold. Cultural operations showed

their influence. Vines systematically manured, regularly hoed and freed from weeds and other herbaceous plants, suffered less than those partly neglected.

Vines with compact wood, with little medulla, proved more resistant than those richer in parenchymatous tissues. Where the old custom of protecting the vines with a layer of earth at the end of autumn after partial pruning was not neglected, no damage was recorded.

As regards the olives, those most damaged were those situated in valleys or in the plains: those situated in the hills resisted better. The olives in almost all the Veronese valley lost their leaves, thus causing the disappearance of the 'olive moth' ('*tignola*', *Prays oleellus*). Among fruit trees, figs and pomegranates were largely killed off in Upper Italy, and loquats also suffered severely. Cherries and plums were damaged in the trunk. For peaches it was observed that while detachment of bark from the trunk was general for plants situated on irrigated land, plants growing on land without much water were not damaged.

Among ornamental plants, cedars, Japan cedars, privets, magnolias, spindle trees, eucalyptus trees and cypresses suffered general loss of foliage and many were completely dried up.

Horsechestnuts, yews, some firs (*Abies Pinsapo*) were damaged especially in the terminal buds.

Evergreen oak in Emilia was badly damaged.

Bamboos were frozen in sporadic cases.

Along field dykes whole rows of willows showed the effects of frost on the trunks. Planes on public roads which had troughs at the foot suffered more. Splitting of the trunk to a length of three metres was observed.

The damage caused by the winter frost varied very much from one region to another and the data collected regarding them are too slight and uncertain to supply a basis for really trustworthy information.

In Piedmont the amount of damage is roughly estimated at 10 %.

In the Province of Parma alone, the damage which vine products will suffer from the cold is estimated at about 25 million liras without taking into account the deterioration of the plants which will be the cause of not inconsiderable loss during another two years. It should be noted in general that the damages from cold, as controlled in the late spring, have been less than was expected judging by what might have been the presumable effects of so low a temperature. In this respect, some are of the opinion that the minima temperatures quoted in vine-growing literature as lethal to the vine should be lowered, this plant having shown itself much more resistant to cold than was previously believed to be the case.

**Kingdom of the Serbs, Croats and Slovenes (Dalmatia) (1).** — During the winter 1928-29 the minimum temperature registered in Northern Dalmatia was  $-12^{\circ}\text{C}$ .; in Middle Dalmatia (Split),  $-8^{\circ}\text{C}$ .; in Southern Dalmatia,  $-3^{\circ}$  to  $-5^{\circ}\text{C}$ .; in the Dalmatian islands,  $0^{\circ}$ , and, for two days only, the temperature varied from  $-1^{\circ}$  to  $-2^{\circ}\text{C}$ .

In Northern Dalmatia, olives, especially those of the "Sitnica" variety, were damaged by the cold; carobs suffered severely, the leaves dried up and the crop was almost completely destroyed; figs also suffered considerably in the more northerly localities and places much exposed to the wind (the terminal branches

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(1) Communication from the official correspondent to the Institute, Mr. P. NOVAK, Director of the Entomological Station, Split.



perished but seldom whole trees); even vines suffered to some extent in mountainous districts and where exposed to the cold; winter barley was severely affected; a good part of the beans died.

In Middle and Southern Dalmatia the citrus trees were greatly damaged, and, among them, the lemons much more than the oranges.

The percentages for certain cultivated plants of cases of (a) damage (b) destruction were as follows:—

	Damaged %	Destroyed %
Olives . . . . .	10	—
Carobs (pods) . . . . .	—	90
Figs (trees) . . . . .	20	—
Vines. . . . .	5	2
Lemons (trees). . . . .	50	—
Oranges (trees). . . . .	30	—
Barley . . . . .	30	20
Beans . . . . .	30	50

Plants exposed to north winds were specially injured.

Damage from cold was noted on fruit, leaves, young branches but only rarely on entire trees.

**Switzerland** (1). — According to the weather report of the Swiss Central Meteorological Station the negative deviations in February 1929, the coldest month, amounted in Northern and Eastern Switzerland to 8°; in Western and Southern Switzerland 5° to 6°; in Ticino 4° to 5°, and on the mountains 3° to 4° C.

As minima temperatures were indicated:

Northern and Eastern Switzerland:	Basle . . . . .	— 22°·8
	Zurich . . . . .	— 24°·2
	St. Gallen . . . . .	— 25°·5
Western Switzerland	Lausanne . . . . .	— 19°·6
	Neuenburg . . . . .	— 19°·3
Jura	La Chaux-de-Fonds . . . . .	— 25°·8
The Alps	Säntis . . . . .	— 29°·3
	Rigikulm . . . . .	— 27°·0
Ticino	Lugano . . . . .	— 10°·0

The more important field crops, such as cereals and the forage plants stood the cold well: no crop damage is reported in regard to them.

(1). Communication from the official correspondent to the Institute, Dr. E. NEUWEILER, Schweizerische Landwirtschaftliche Versuchsanstalt, Oerlikon-Zürich.

## LEGISLATIVE AND ADMINISTRATIVE MEASURES

**Brazil.** — By 'resolução' of 19 February 1929 the Ministry of Agriculture, Industry and Commerce has prohibited, but only within the port limits in which the 'Serviço de Vigilância Sanitaria Vegetal' functions, the sale of liveplants and parts of liveplants. This prohibition is applicable to agricultural establishments concerned with the cultivation and sale of such plants and parts of plants. For the sale, in the country, of plant products of the above, the said Service will grant the required sanitary certificate ('certificado de sanidade') whereby alone the establishment will be authorized to sell freely. For consignments from the territorial limits of the Service to any other part of Brazil, the owner of the establishment shall produce this certificate to the agents of the railways or national navigation Companies. To private persons who intend to send consignments outside the said territorial limits, the Service will grant the necessary transit permit. To establishments which have observed the provisions of art. 22 and 23 of the 'Regulamento de Defesa Sanitaria Vegetal' No. 15,189 of 21 December 1921, will be granted a sanitary certificate valid for a period of time therein specified, which may not exceed one year. At the expiration of the fixed period the Service will grant a further certificate after a fresh examination of the products exposed for sale or of the plantations, nursery, orchard, etc. (*Boletim do Ministerio da Agricultura, Industria e Commercio*, Rio de Janeiro, 1929, anno XVIII, vol. I, n. 2, pags. 134-135).

**Chile.** — In virtue of the Decree No. 105 of 2 January, 1929 the weed known locally as 'galega' ([goat's rue] *Galega officinalis*) has been declared to be an agricultural pest ('plaga de la agricultura') and its destruction has been proclaimed compulsory in the manner and in the zones indicated:

(a) the zone formed by the departments of Petorela, San Felipe, Los Andes, Quillota and Valparaíso, of the province Aconcagua, and by the department of Santiago: it is compulsory, in this zone, to control this plant in a permanent way to the point of total extermination;

(b) zone formed by the department of Melipilla, Maipo, Rancagua, Cachapoal and Caupolicán: it is compulsory to proceed every year, and not later than 1 January, to the cutting of this plant before the flowering and ripening of the seeds;

(c) zone formed by the departments of San Fernando, Santa Cruz, Curicó, Mataquito and Lontué: as in the previous case;

(d) zone formed by the departments of Talca, Constitución, Loncomilla, Linares, Parral, Cauquenes, Itata, San Carlos, Chillán and Bulnes and by the grounds invaded by the weed which will found more to the South; it is compulsory to control the plant permanently to the point of extermination. (*Diario Oficial de la República de Chile*, Santiago, 5 de febrero de 1929, año LII, núm. 15,291, pág. 678).

\* \* The Decree No. 433 of 12 March, 1929 establishes that the inspection certificates, given by the Export Control Service of the Department of Commerce of the Ministry of Foreign Affairs, for agricultural products intended for export, must be accompanied by the sanitary certificate given by the 'Servicio de Policía Sanitaria Vegetal' of the 'Ministerio de Fomento'. (*Ibid.*, 6 de abril de 1929, núm. 15,341, pág. 1776).



**Cyprus** (1). — A new Order in Council (No. 1305 of 20th May, 1929) has been issued amending the regulations governing the importation of potatoes. All previous Orders respecting the importation of potatoes are cancelled.

Potatoes may only be imported for seed purposes and through the ports of Famagusta, Larnaca, Limassol and Paphos, and in such quantities and from such countries only as have been specially authorised beforehand by the Director of Agriculture.

Potatoes must be imported direct from the country of origin, but may be transhipped if they remain in Customs charge. They must not be in bags containing more than one hundredweight.

All imported seed potatoes must be the produce of crops certified during growth to be not less than 97 % pure.

Every consignment must be accompanied by: (a) A statutory declaration by the shipper in scheduled form giving the name and address of the grower; place of origin; variety; size and dressing; inspection certificate or report number; a statement that they were not grown in land infected with the diseases named in the schedule. (b) A certificate from the competent authority stating that 30 days before the date of shipment the scheduled diseases were not known to exist within 5 miles of the place where the potatoes were grown. (c) A certificate from the competent authority stating that the consignment has been inspected and found to be in good condition and free from diseases and insect pests.

All consignments of potatoes are subject to inspection and if found to be or suspected of being diseased, may be destroyed, disinfected at the cost of the importer or re-exported, without compensation.

Consignments of potatoes not conforming to the provisions of this Order are considered to be diseased and disposed of accordingly.

Importers must supply lists of names of persons to whom imported potatoes have been sold.

The new Order came into force on 27th May, 1929.

The diseases at present scheduled under this Order are:

Potato tuber moth (*Lita solanella* or *Phthorimaea operculella*), Wart disease (*Synchytrium endobioticum*) and Colorado potato beetle (*Leptinotarsa decemlineata*).

**Cuba.** — With the object of preventing the introduction into the island of the Mediterranean fruit fly ('mosca del Mediterráneo', *Ceratitis capitata* Wied.) by Presidential Decree No. 740 of 10 May 1929 the importation of all fresh fruit, cultivated or wild, as well as of chillies and gourds of all kinds, tomatoes, green beans of all kinds, cucumbers, egg-fruits, and any other vegetable which may subsequently be recognized as subject of the attack of this 'fly', coming from Florida, United States of America is absolutely prohibited. Similarly the importation of plants which furnish the above-mentioned products and of earth, sand and prepared fertilizers is also prohibited.

The origin of vegetables and plants from other States of North America of which importation is permitted, shall be attested by means of a consular invoice which must accompany such plants or parts of plants.

Vehicles of all kinds, including motorcars, motorwaggon, railway trucks in transit for Cuba, coming from Florida and from other States and which must necessarily pass through Florida, will be subjected to fumigation at the last port of

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(1) Communication from the official correspondent to the Institute, Mr. H. M. MORRIS, M. Sc., F. E. S., Government Entomologist, Nicosia, Cyprus.

departure for Cuba such fumigation to be attested by a certificate indicating the number and initials of each truck, issued by an authorized officer of the Department of Agriculture of the United States of America or of the State Plant Board of Florida.

During the stay in Cuban ports the stores of fruit and vegetables on board ships coming from ports of Florida must be kept under seal, with an absolute prohibition to throw into the sea fruit and vegetables or parts of them (skins, refuse, etc.). The same provision will be applicable to ships coming from the following countries: — Jamaica, Bermuda, Mexico Central and Southern America, Porto Rico, Hawaii, Australia, the Philippines, Spain, France and Italy.

The supervision of ships in ports in which there are no plant-disease inspectors ('Inspectores de Sanidad Vegetal') will be carried out by inspectors of the respective Customs. These inspectors shall require from passengers coming from Florida a sworn declaration that they are not carrying with them fresh fruit, vegetables and plants, the importation of which has been prohibited by the present Decree. (*Revista de Agricultura, Comercio y Trabajo*, Publicación mensual, órgano oficial de la Secretaría de Agricultura, Comercio y Trabajo, Habana, Cuba, mayo de 1929, año XI, vol. 10, núm. 11, pág. 48).

**Italy.** — The occurrence of grape phylloxera [*Phylloxera vastatrix*] in Roddino, Province of Cuneo, and Battaglia Terme, Province of Padua, having been reported, by Ministerial Decrees of 11 July 1929 these two Communes have been declared to be attacked by phylloxera. (*Gazzetta ufficiale del Regno d'Italia*, Roma, 24 luglio 1929, anno 70º, n. 171, p. 3492).

\* \* The Ministerial Decree of 12 July 1929 prescribes the regulations for the importation of potatoes, exclusively intended for planting, for the agricultural season 1929-1930.

The faculty of granting permission for the importation of such potatoes has been delegated to the 'R. Stazione di Patologia vegetale' at Rome, whose duty it is to indicate the locality of the foreign countries from which consignments may be permitted on the basis of phytosanitary investigations made at the places of production during the past three years, and to fix the rules under which the consignments should be admitted by the Customs authorized for importation. (*Gazzetta ufficiale del Regno d'Italia*, Roma, 18 luglio 1929, anno 70º, n. 166, pp. 3435-3436).

**Morocco.** — Plants, parts of plants, fruits, vegetables, plant debris or dried fruits as well as the packings used or having been used for the transport of these products are, on admission to the country, submitted to a sanitary inspection and if necessary to fumigation.

Since the above operations can only be carried out at the ports of Casablanca, Kénitra and at the frontier post of Oudjda, the importation of the above products can only take place at these points.

The following plant products are not however submitted to the measures indicated: cereals, kidney beans, peas, chick peas, beans, rough and worked timber, barks, cattle cakes, straw, hay, bran, flour and meal.

Plants and parts of plants, other than seeds and intended for multiplication must be accompanied by a certificate of sanitary inspection released by the competent services of the country of origin.

Potatoes are on admission submitted to sanitary inspection and if necessary to fumigation. If the consignments are not less than 20 quintals, the importation



of these tubers may be effected by the ports of Safi, Mazagan, Rabat and Mogador, as well as the localities already indicated.

In addition potatoes must be consigned in new packing materials. All consignments of potato tubers must be accompanied by a certificate showing that they come from ports situated more than 20 km. from fields infected by 'Colorado beetle' ('doryphore', *Leptinotarsa decemlineata*) or by 'wart disease' ('gale noire' or 'maladie verruqueuse', *Synchytrium endobioticum*).

This document must also bear the indication of the varieties to which the potatoes belong.

The traders of Algeria effecting re-exportation of potatoes to the Algerian-Moroccan frontier must have the sanitary inspection certificates vised by the Plant Protection officer responsible in Algeria for the inspection of imports. This document is afterwards addressed to the Service of the Sherifian customs at Oudjda by the Algerian officer mentioned. Algerian importers will then be able to re-consign to Morocco in one or more consignments and within the limits of the quantities shown on the certificates the lots of potatoes in respect of which the said sanitary documents have been transmitted to the Sherifian customs offices.

Forage seeds are on their entry into the French zone submitted to an examination intended to ascertain that they do not contain dodder seed [*Cuscuta*].

Importation of cotton plants, the woody parts, seeds, bolls and of unginned cotton is prohibited.

Every package containing plants or plant material which has to be submitted to the sanitary inspection must bear a label on which is inscribed the following indications: name and Christian names of the sender, the locality, department or province of the country of origin of the objects, the nature, variety and quantity of the contents of each package, the name and address of the consignee, finally the mark and number. (MINISTÈRE DE L'AGRICULTURE, DIRECTION DE L'AGRICULTURE, *Bulletin de l'Office de Renseignements Agricoles*, Paris, 1<sup>er</sup> mai 1929, n<sup>o</sup> 9, p. 128).

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## NOTES

**Cotton Protection in Turkestan.** — The Central Cotton Committee has founded in Tashkent, Turkestan, a Station for the study cotton diseases and insect pests.